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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,838	02/08/2006	Erwin Rinaldo Meinders	NL030976	7343
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EXAMINER				
CHU, KIM KWOK				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/567,838

Applicant(s)

MEINDERS ET AL.

Examiner

Kim-Kwok CHU

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Pre-Amendment filed on 2/8/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Individual Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 22-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 22, lines 2 and 6, the claimed recorder has a "means for recording information" and "irradiation means". Both means are used to recording information on an optical disc. These two means lacks any association/correlation that renders the claim language as a whole unclear and confusing.

Similarly, in Claims 23 and 24, the claimed recorder has a "means for recording information" and "irradiation means". Both means are used to recording information on an optical disc. These two means lacks any association/correlation that renders the claim language as a whole unclear and confusing.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-21 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Nagashima (U.S. Patent 4,569,038) in view of Asai et al. (U.S. Patent 5,474,874).

Nagashima teaches a method of recording information on an optical disc very similar to that of the present invention. For example, Nagashima teaches the following:

(a) with respect to Claim 1, the optical disc comprising a first groove, a second groove adjacent to the first groove and a land separating the first groove from the second groove by a track pitch distance T_p (Figs. 21A and 21B), the method comprising irradiating a region of the optical disc with a focused spot of optical energy having a radius R_0 between a center of the focused spot and a point in the focused spot where the optical energy $1/e$ times a maximum optical energy of the focused spot (column 10, lines 8-11), characterized in that the

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track pitch distance T_p is less or equal to the radius R_0 times five divided by three (column 9, line 45; track pitch $2P = 1.06 (\lambda/NA)$ is about $5/3$ of the spot diameter (λ/NA) where λ is $0.63 \mu m$ and NA is 0.4).

However, Nagashima does not teach the following:

(i) with respect to Claim 1, the grooves are filled with a dye where the land is covered by the dye;

(ii) with respect to Claim 6, the dye has an absorption which increases with increasing absorbed optical energy. (inherent property of a recording layer where a recording power is higher than a reproducing power);

(iii) with respect to Claim 7, the dye has a threshold for thermal decomposition or degradation and that the threshold is reached with the focused spot;

(iv) with respect to Claim 8, the land is covered by a layer of the dye with a thickness at least 3 times thinner than a depth of the groove; and

(v) with respect to Claim 9, the dye in the groove is thermally insulated from a reflection layer.

Asai teaches the following:

(i) an optical disc having a recording layer containing a dye (abstract);

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(ii) the dye has an absorption which increases with increasing absorbed optical energy (inherent property of a recording layer where a recording power is higher than a reproducing power);

(iii) the dye has a threshold for thermal decomposition or degradation and that the threshold is reached with the focused spot (dye react with an irradiating light beam and forms a light spot);

(iv) the land is covered by a layer of the dye with a thickness at least 3 times thinner than a depth of the groove (Fig. 1; depth of a groove is many times the thickness of a dye film); and

(v) the dye 2 in the groove is thermally insulated from a reflection layer 3 (Fig. 2).

In order to form/burn information spots on a recording track such as a land or a groove, a material such as dye having its reflectivity reacts with a light beam's intensity is used in the track. Hence, to record data on Nagashima's optical disk, it would have been obvious to one of ordinary skill in the art to use a light reactive material such as Asai's dye in Nagashima's track, because the dye changes its reflectivity after receive an irradiating light beam.

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(b) with respect to Claim 2, Nagashima further teaches that the track pitch distance T_p is less or equal to the radius R_0 times five divided by four (column 9, line 45; track pitch $2P = 1.06 * (\lambda/NA)$ is about $5/4$ of the spot diameter (λ/NA) where λ varies about 0.63 um and NA varies about 0.4).

(c) with respect to Claim 3, Nagashima further teaches that the track pitch distance T_p is less or equal to the radius R_0 times six divided by five (column 9, line 45; track pitch $2P = 1.06 * (\lambda/NA)$ is about $5/4$ of the spot diameter (λ/NA) where λ varies about 0.63 um and NA varies about 0.4).

(d) with respect to Claim 4, Nagashima further teaches that that the track pitch is less or equal to R_0 (column 9, line 45; track pitch $2P = 1.06 * (\lambda/NA)$ is about $5/4$ of the spot diameter (λ/NA) where λ varies about 0.63 um and NA varies about 0.4).

(e) with respect to Claim 5, Nagashima further teaches that the sections of the grooves are pits (Figs. 21A and 21B).

(f) with respect to Claim 10, adjacent marks are spatially aligned to each other (Figs. 21A).

(g) with respect to Claim 11, adjacent pits are spatially aligned to each other (Fig. 21A).

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5. Apparatus claims 12-21 are drawn to the apparatus corresponding to the method of using same as claimed in claims 1-11. Therefore apparatus claims 12-21 correspond to method claims 1-11, and are rejected for the same reasons of obviousness as used above.

6. Claims 22-24 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Nagashima (U.S. Patent 4,569,038) in view of Asai et al. (U.S. Patent 5,474,874) and Inui et al. (U.S. Patent 6,379,864)

Nagashima in view of Asai teaches a method of recording information on an optical disc very similar to that of the present invention. However, both Nagashima and Asai do not teach the following:

(a) with respect to Claim 22, the radius R_0 is greater than or equal to the track pitch T_p times three divided by five.

(b) with respect to Claim 23, the radius R_0 is greater than or equal to the track pitch T_p times four divided by five.

(c) with respect to Claim 24, characterized in that the radius R_0 is greater than or equal to the track pitch T_p times five divided by six.

Inui teaches that the light spot having a radius R_0 and the

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Ro is greater than the track pitch Tp times from 3/5, 4/5 to 5/6 (Fig. 1; column 5, lines 51-55).

In order to increase the recording capacity of an optical disk, recording tracks can be narrowed so that more tracks are available for storing information. Hence, it would have been obvious to one of ordinary skill in the art to increase the tracks of Nagashima's optical disk by narrowing the track pitch with respect to an irradiating light beam's diameter similar to Inui's tracks, because the extra tracks store additional data.

Related Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kakuta (7,129,019) is pertinent because Kakuta teaches an optical disk having land and groove contained dye.

Dei Mar et al. (6,022,604) is pertinent because Dei Mar teaches a track pitch of land and groove in an optical disc.

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8. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

/Kim-Kwok CHU/

Examiner AU2627

November 23, 2008
(571) 272-7585

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627